

**STATEMENT OF
DANIEL M. COLLINS
PRESIDENT
THE OPERATION RESPOND INSTITUTE, INC.
BEFORE THE
U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
SUBCOMMITTEE ON RAILROADS**

APRIL 28, 2005

Thank you Mr. Chairman. My name is Daniel M. Collins. I am Chairman of the Board and President of the Operation Respond Institute, Inc. On behalf of the carriers and emergency responders that support Operation Respond, in partnership with Federal agencies, I am honored to provide the following testimony on new technologies for railroad safety and security. Accompanying me here today is Dr. James W. Boone, Executive Vice President of Operation Respond and Mr. Gerald Lynch, Executive Director of the Regional Information Sharing System (RISS), one of our strong law enforcement partners.

Mr. Chairman, I would like to express the gratitude of the Operation Respond team for your foresight in holding this hearing. Also, to acknowledge your acceptance to serve on the Operation Respond International Steering Committee along with your esteemed colleague, the Honorable Nick J. Rahall of West Virginia. The presence of the both of you adds an element of importance and national interest to all that we do and is a motivation for all of us.

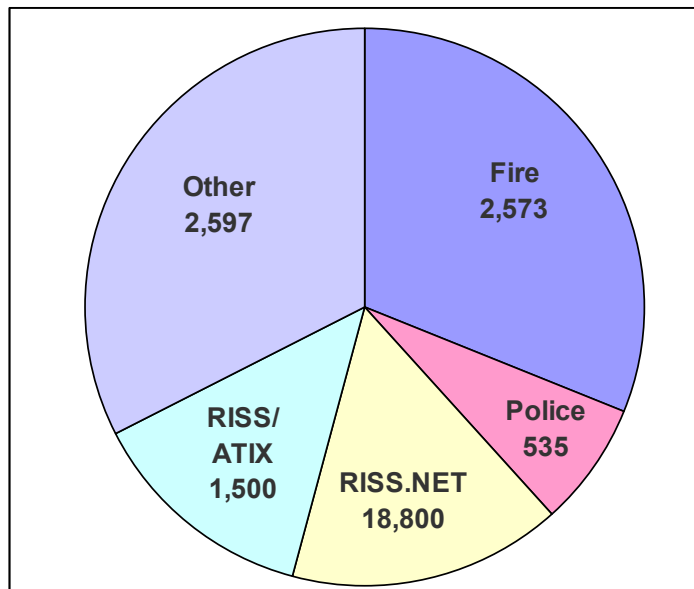
Operation Respond has been involved in developing software products for first responders since 1995. Yes, in April, we celebrated ten years as a non-profit institute dedicated to first responders. We are not new kids on this block. We have learned through trial and error how to package software that is easy to use by responders, not burdensome to the carriers and that provides accurate and timely data. We could not have accomplished all that we have without the assistance of the International Association of Fire Chiefs, the International Association of Fire Fighters, the National Volunteer Fire Council, the International Association of Chiefs of Police and the International Union of Police Associations. These response agencies and the Association of American Railroads and the American Public Transportation Association have been there for us time and time again to fine tune our products and assist with dissemination and training.

Current Status of OREISTM

Operation Respond's principal software, the Operation Respond Emergency Information System (OREISTM) is currently deployed in over 26,000 emergency response agencies across the United States, Canada and Mexico, reaching an estimated one million responders. Among other components, this software provides a direct link between the software user and the manifests of participating railroads. Through this mechanism, responders can obtain verification of hazardous materials contents of leaking rail cars in less than one minute. Besides the verification, the system provides response guidance on

the particular chemical. Our goal is to make sure that the **first responder is not the first victim**.

Exhibit I – OREIS™ Installations



All Class I Railroads in the US and Canada have signed license agreements with Operation Respond facilitating the exchange of information. We have a signed agreement with the TFM in Mexico and are working on a full fledged Spanish version. Also, many regional and short lines participate, such as the Alaska Railroad and Montana Rail Link. Please see Attachment A for the entire list.

Basically, Mr. Chairman, the freight railroads have stepped up to the plate. They provide, through our secure software, all the information they have on chemical contents to responders along their routes. This is done on an exception basis, if and when the need arises. A typical screen appears as Exhibit II.

Exhibit II – Railroad Search Screen

Railroad Car ID Search Result

24-Hour Emergency #: (800)453-2530

STCC: 4918311

Railcar ID: GATX1234

Hazmat Class: DIVISION: 2.3

Placarded: NONFLAMMABLE GAS

UN #: UN1942

Chemical Name: AMMONIA, ANHYDROUS

Hazardous Information

☒ Description of Contents:
 ☐ Evacuation
☐ Personnel Protection
 ☐ On Fire
☐ Air Spill
 ☐ Not On Fire
☐ Water Spill
 ☐ Additional Information
☐ Land Spill

DESCRIPTION OF CONTENTS

ANHYDROUS AMMONIA IS A CLEAR COLORLESS GAS WITH A CHARACTERISTIC ODOR. ALTHOUGH IT IS A NONFLAMMABLE GAS, IT WILL BURN WITHIN CERTAIN VAPOR CONCENTRATION LIMITS, AND THE FIRE HAZARD WILL INCREASE IN THE PRESENCE OF OIL OR OTHER COMBUSTIBLE MATERIALS. IT IS SHIPPED AS A LIQUID UNDER PRESSURE. CONTACT WITH THE LIQUID CAN CAUSE FROSTBITE. IT IS SOLUBLE IN WATER FORMING A CORROSIVE LIQUID. ALTHOUGH AMMONIA IS LIGHTER THAN AIR, THE VAPORS FROM A LEAK INITIALLY HUG THE GROUND. IT WEIGHS 6 LBS./GALLON. PROLONGED EXPOSURE OF THE CONTAINERS TO FIRE OR HEAT MAY RESULT IN THEIR VIOLENT RUPTURING AND ROCKETING. LONG TERM EXPOSURE TO LOW CONCENTRATIONS OR SHORT TERM EXPOSURE TO HIGH CONCENTRATIONS CAN RESULT IN ADVERSE HEALTH EFFECTS FROM INHALATION. IT IS USED AS A FERTILIZER, AS A REFRIGERANT, AND IN THE

Buttons: Previous, Next, More Info, Link to CAMEQ, Contact CHEMTREC, Tank Schematics, Print, Another Search, Main Menu

In calendar year 2004, this feature within the software was activated over 1,800 times, for training, drills, testing and incidents. Exhibit III summarizes activations.

Exhibit III – Railroad Freight Activations

2004 OREIS Freight Railroad Activations

Top 10 States/Provinces		Railroad Activation	
State A	206	Railroad A	5
State B	100	Railroad B	213
State C	91	Railroad C	232
State D	88	Railroad D	292
State E	87	Railroad E	118
State F	87	Railroad F	715
State G	84	Railroad G	23
State H	80	Railroad H	256
State I	80		
State J	77		
TOTAL US/Canada = 1,856			

Now to address the topics specifically mentioned in your letter requesting this testimony. I will address three of these topics, improved infrastructure inspection and security technologies, better emergency planning and coordination and modern passenger coach technologies.

Improved Infrastructure Inspection and Security Technologies.

Mr. Chairman, a railroad accident or terrorist incident, especially one involving hazardous materials or passengers, presents special challenges for fire and law enforcement response, and for analysts assessing the vulnerability and strengths of the nation's railroad infrastructure. I would like to relate to you and the Committee our views on these challenges, and some suggested solutions.

These challenges occur in a time when emergency response and dispatching/call center resources at local, county and state levels are confronting unprecedented levels of emergency service needs, including Homeland Security issues. Fire, rescue and EMS departments, and police and sheriffs' departments now have increased responsibilities for Homeland Security, which also impacts the nation's 911 Centers and other Public Safety Answering Points (PSAP's). Few resources can be devoted exclusively to meet these new requirements, especially in volunteer organizations with limited budget sources, high personnel turnover and constant training needs. Accordingly, any efforts that would assure the efficient deployment of available emergency response resources when an incident occurs would be warmly welcomed by America's responders.

Emergency responders and their dispatchers require certain data and information in order to properly "size up" the response actions needed. Dispatchers must make

immediate judgments regarding the **nature of the emergency** (fire, medical emergency, criminal activity, spill, theft, terrorism, natural disaster, hazmat, etc.) Once having done so, the **exact location (addressing) of the incident** will determine the jurisdictions to be involved and the status of available units. Finally, in many cases, the dispatcher and responding units may need supplemental information on **how to reach the incident scene**, in terms of road access and obstacles/dangers to equipment or personnel, if any.

We believe responders to rail transportation incidents often need help to confirm the exact incident location and/or how best to reach it. Railroad infrastructure landmarks, features and terminology are not always understood by responders and have led to public safety dispatchers and responders wasting valuable time finding trains in distress or when answering other urgent calls for assistance. For example, a railroad mile post can not be directly related to a mile marker located along a nearby highway, unless it is assigned geographic coordinates in a geographic information system (GIS). Literally, the time saved by being able to quickly relate rail infrastructure to nearby streets and roads can diminish an incident's impact, and perhaps save the lives of those on board (i.e. passenger trains and crew members) and the public.

Repeatedly, the National Transportation Safety Board (NTSB) has found that prompt response to rail incidents or accidents is the key to reducing the severity of injuries to passengers and employees, property damage, and collateral damage. *Prompt and sure response is never more critical than when dealing with actual or threatened terrorist acts.* Not all such threats involve rail passenger stations, such as the 2004 bombing in Madrid, Spain. Fires, collisions, and derailments – whether they are intentional or accidental -- require immediate attention by America's public responders along the nation's rail routes, but even more critical are responses to on-board hostage or other law enforcement or terrorist emergencies, which can occur literally anywhere. Examples of typical scenarios include delays caused by the inability to quickly determine where a train is actually located, to literally responding to the wrong side of a river. In response to these situations, the NTSB has recommended that railroads provide milepost information to public agency emergency dispatch organizations to assist in determining incident location. (*NTSB Safety Recommendation R-01-22; December 20, 2001.*)

Operation Respond has found that a searchable database of georeferenced railroad features, designed to overlay on aerial or satellite imagery and street maps, enables emergency responders to quickly and reliably reach an incident site. In 2004, under Department of Homeland Security sponsorship, Operation Respond developed and delivered an enhanced GIS and overhead imagery system for DHS and Amtrak Police use in planning and emergencies on the Amtrak-owned Northeast Corridor (NEC), from Washington to Boston. The project was a highly focused effort completed prior to the convention activities in New York and Boston, respectively. Operation Respond's Amtrak NEC Rail Incident Location System was developed as a stand-alone, rail feature search engine designed to be user self-trained in less than 15-20 minutes.

This new GIS software application can identify the location of specific features along the railroad, including signals, mileposts, bridges and stations. (Please see Exhibits IV and V, below, for search examples.) The system covers the entirety of Amtrak's Northeast Corridor mainline, which runs approximately 457 route miles from

Washington, DC to Boston. The system displays detailed color overhead imagery for a half-mile on either side of the NEC main rail lines, and serves as a working prototype for a national program.

Exhibit IV-- NEC Passenger Station Search: Perryville, Maryland

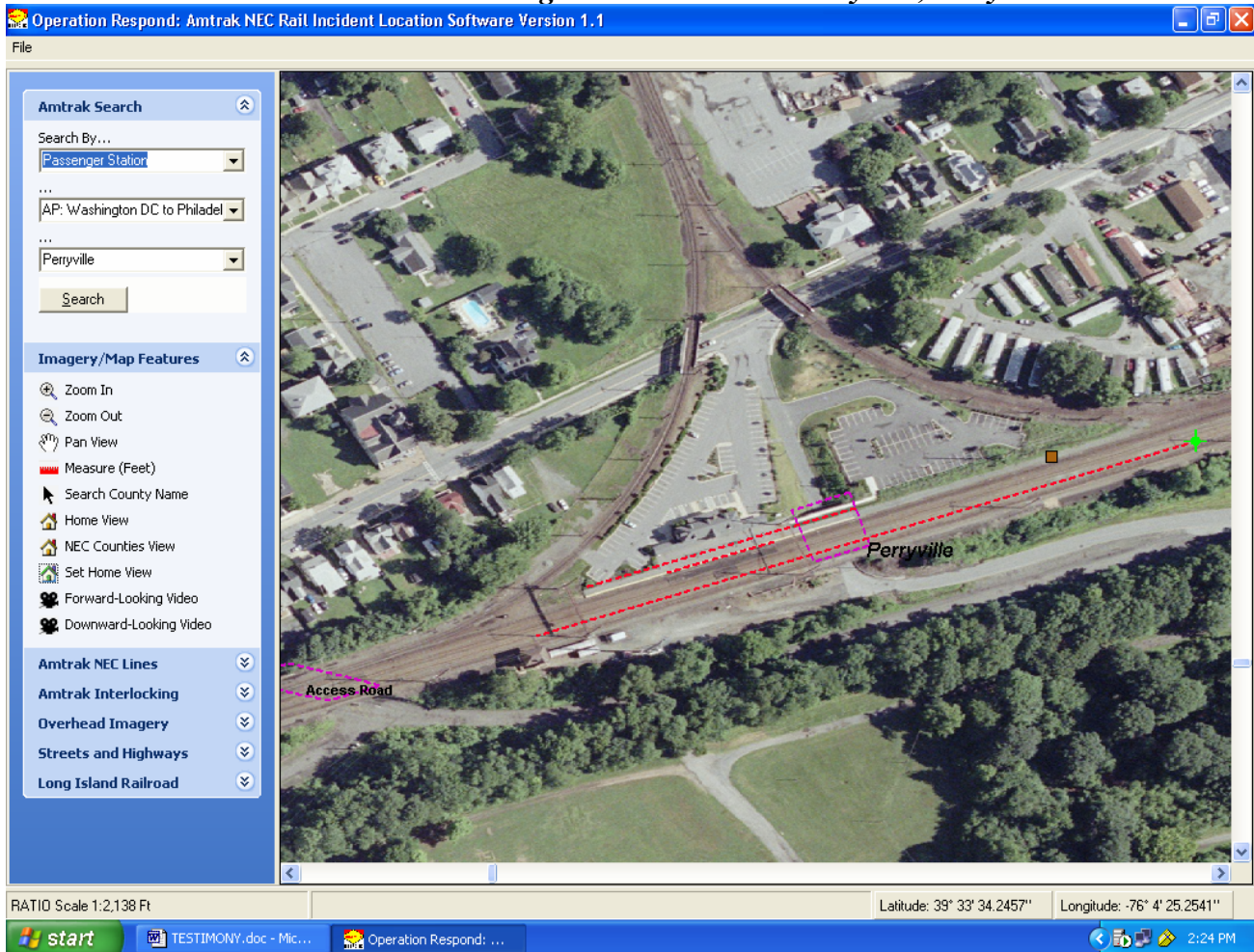
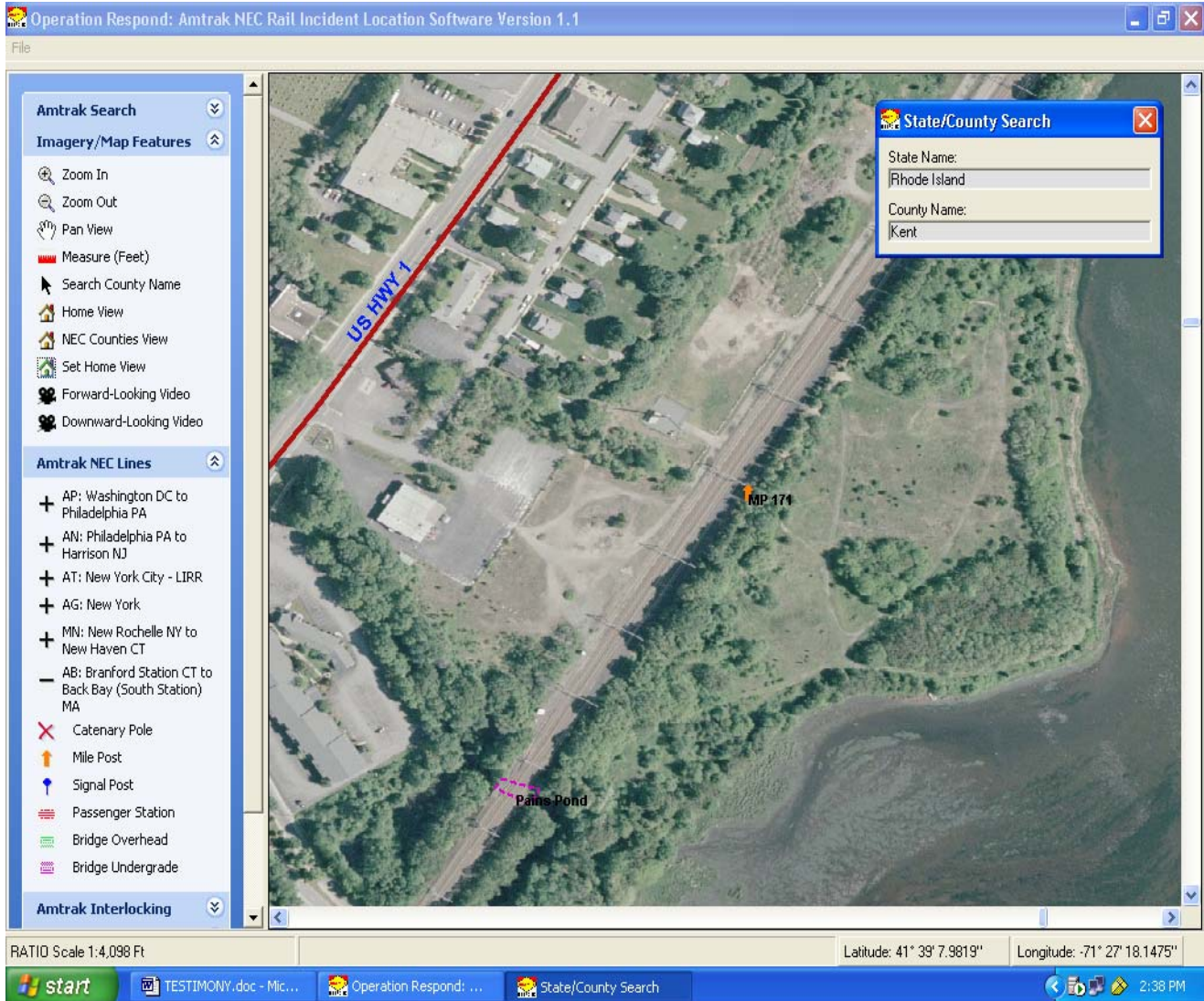


Exhibit V-- NEC Milepost Search: MP 174 Kent County, RI



A rail network infrastructure GIS program will also have positive safety implications for the North American rail freight industry. Prompt access to the locations of freight derailments and hazardous materials incidents is paramount to the safety of crewmembers and communities. Having location and scene access geospatial information available together with OREIS™ and its links with the major railroads and the Chemical Transportation Emergency Center (Chemtrec) would give responders substantial assistance at the scene of any freight incident, *and quickly identify which agencies should be notified, based on their location.* This is particularly important where hazardous materials are involved, as nearby responders must quickly establish if such materials are indeed involved, and if so, what the dangers to themselves and the community are. Having such an integrated program available for first responders where mixed freight and passenger services are conducted is also a major step forward in rail safety and security, with application wherever such operations exist.

The emphasis would be on identifying common visual references for the train crew and dispatchers to provide a direct linkage with street maps and overhead imagery, including features in suggested priority order:

- (1) Mileposts
- (2) Highway grade crossings/pedestrian crossings/farm roads
- (3) Railway fixed signals
- (4) Interlockings/control points
- (5) Bridges (undergrade/overhead) and large culverts/drains
- (6) Track turnouts/crossovers
- (7) Other relational landmarks, i.e., pipeline and cable markers, electric transmission facilities, access gates, fence entry points, etc.

Operation Respond believes that a cooperative effort with the Association of American Railroads (AAR), rail carriers and emergency response organizations can identify and develop a standardized, geospatial database of essential railroad features for mapping and imagery applications to be used by railroad police and selected public agency emergency response organizations. This core network would contain only the basic geospatial information necessary to fulfill program objectives, while facilitating the inclusion of other features of importance to both railroads and emergency responders – now or later. A coordinated national approach involving all major railroads is a necessity for this purpose, in order to assure that user agencies have access to a uniform, standardized set of data, which will yield economies of design and implementation

The implementation of a national program for the geo-referencing and cataloguing of the railroad infrastructure, integrated with accurate street maps and overhead imagery, will produce substantial benefits for the rail carriers, the emergency communities and the public. These benefits would include:

- (1) Allowing carriers to determine the appropriate response organizations in an emergency by matching responder dispatch areas with railroad features and line/route segments;
- (2) Assisting railroad police and emergency operations desks to pre-plan deployments of security personnel, locate incidents and communicate with public agency dispatchers and establish effective emergency response, by converting railroad features to a common vernacular -- streets and road intersections
- (3) Help responders better understand incident terrain, access limitations, any need for special vehicles, etc., by referral to maps and imagery; and
- (4) Allow responders to better understand and protect critical railroad infrastructure, reducing vulnerabilities and saving time and lives in incidents.

Better Emergency Planning

The Operation Respond approach to improved emergency planning and coordination is to bridge the gap between the responders and the carriers. The carriers have a wealth of information that they develop for their own internal management. This information, whether it is right of way engineering data prepared for real estate purposes, hazardous materials invoices for shippers, or passenger train schematics prepared for maintenance personnel contains vital information for responders when incidents occur. Responders need to know the exact location of trains correlated to the nearby highways,

so they can respond quickly. Responders need to know the layout of passenger train cars in case they have to evacuate or extricate passengers.

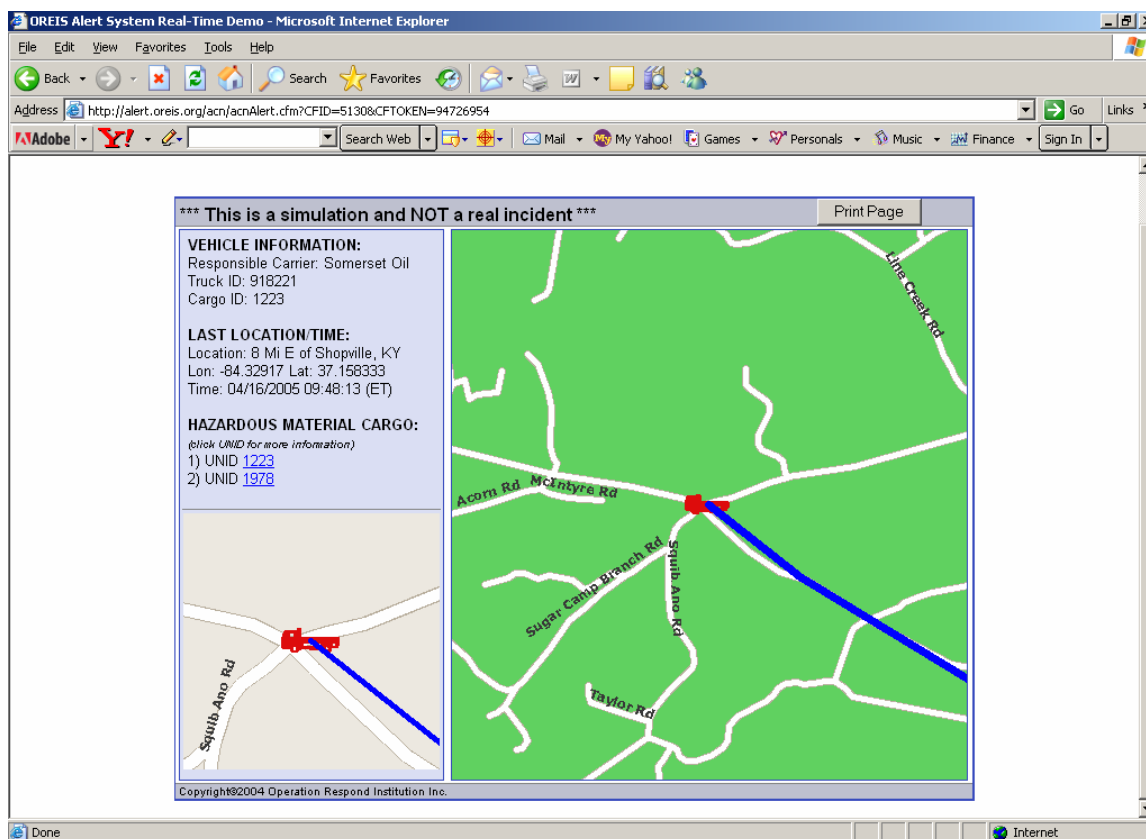
Our approach, Mr. Chairman, is to work with both the carriers and responders. Through easy-to-use software, this complicated railroad data is simplified and reconfigured so that the nineteen year old volunteer firefighter can quickly and easily obtain what they need to commence a response. If I had to use one word, I would say it is **“TRUST”**. The carriers trust Operation Respond in our expertise to secure their data and present it accurately. The responders trust Operation Respond in that we are providing them real world, time sensitive response guidance. OREIS™ is the technology, but **“TRUST”** is the driving force.

Our other motto is **“ALWAYS BE PREPARED”**. While the OREIS™ software is strongly oriented toward incident response, it is also a remarkable training tool. Almost all the carriers have integrated OREIS™ into their hazardous materials training curricula. In fact, the AAR Test Center in Pueblo, Colorado has seventeen sets of OREIS™ in their computerized training classrooms. Many states, including Maryland, New York, Texas, Mississippi and others offer OREIS™ training as part of their fire department new entrant hazardous materials training. Operation Respond, working with the Rahall Transportation Institute at Marshall University is about to launch an OREIS™ internet training capability.

With respect to improved coordination, I would like to introduce a new technology that Operation Respond has been working on for the past two years. Our goal, Mr. Chairman, is to turn the OREIS™ user base, now 26,000 strong and growing, into a transportation incident alert and messaging system. What we are working on with the Association of American Railroads and the individual carriers is a capability that sends alerts and messages to these responders and to the carriers 24-7 operations centers. The alerts/messages can be directly associated with incidents or based on a potential threat such as an explosive device or other possible terrorist actions. In fact we have a license arrangement with the Emergency Services Information Network Corporation (ESINC) in Houston, Texas to develop this network alert and messaging system.

This concept is beginning to bear fruit in the trucking industry. With funds provided through last year's Congressional earmark to FMCSA, Operation Respond has integrated with several corporations using GPS to track trucks. Based on an incident or action such as a driver activated panic button, off route deviation, truck roll over or theft, Operation Respond, upon receipt of message from the GPS tracking firm, will push an alert to OREIS™ users. This is accomplished through cell phones (voice or text), emails, pagers, faxes. Upon receipt of the alert, the responder is directed to a secure web site for details of the incident. Exhibit VI below is an indication of the information on the web site. This technology is very applicable to railroad security and incident response. Operation Respond successfully demonstrated this approach in 2002 with a railroad locomotive traveling from Chicago to St. Louis, as part of an exercise with the FRA/AAR positive train control project.

Exhibit VI – Truck Alerts



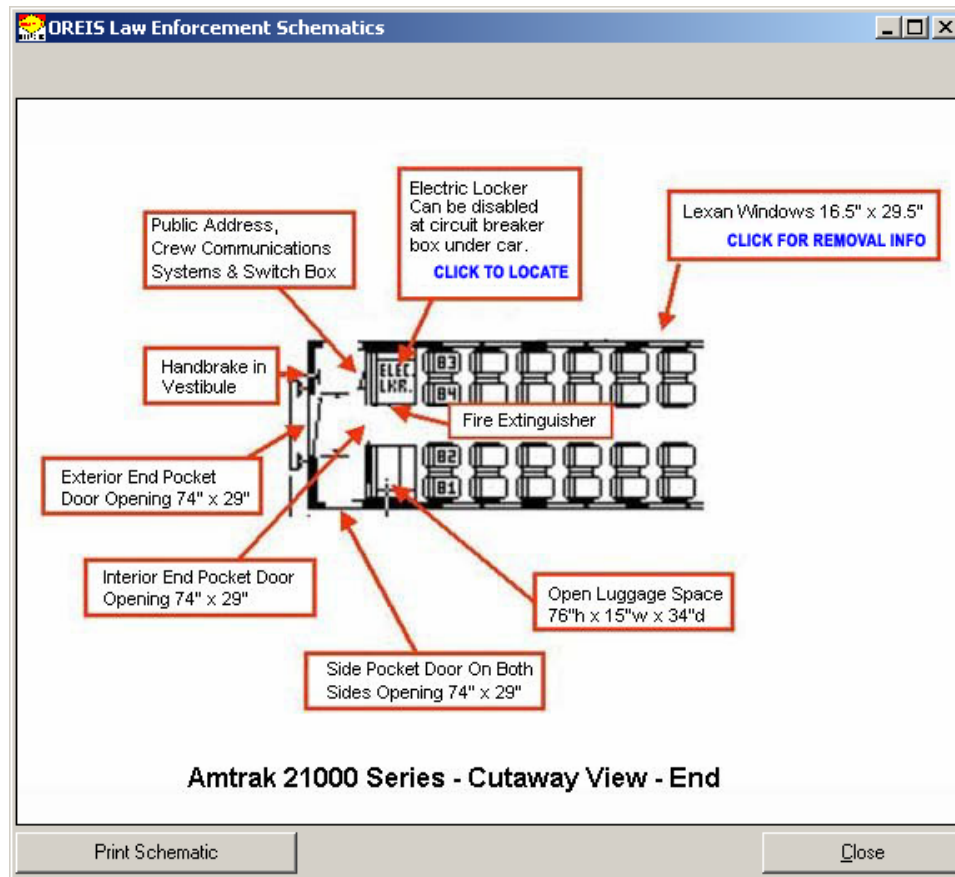
Modern Passenger Coach Technologies

Law enforcement has been particularly interested in Operation Respond passenger coach software. This component of OREIS™ features passenger car and locomotive schematics highlighting emergency information, such as emergency windows and doors, electrical systems and superstructure penetration points. Amtrak has led the way in this feature. At the present time, every Amtrak car and locomotive, including the Acela train is schematically presented in OREIS™. As Attachment A indicates, the response to this feature has led to the addition of many other commuter lines in the US and Canada, as well as VIA Rail Canada.

As Mr. Lynch will attest, the law enforcement component of RISS views these schematics as a very effective tool for dealing with on-board incidents. These could range from identifying locations for hiding bombs, how to approach an on-board hostage situation and for SWAT team pre-planning. Another law enforcement communication system, NLETS – the International Justice and Public Safety Information Sharing Network is now also engaged with Operation Respond to add this feature and, in fact, all of what we do into the NLETS system. When this is completed, Mr. Chairman, which is only weeks away, Operation Respond will be adding another 30,000 agencies with access to OREIS™. NLETS has over 480,000 devices linked to its system. Through this capability, a patrol car located in Cleveland, Ohio will be able to obtain all of OREIS™.

From our vantage point, with passenger train equipment, the more standardization the better. Ideally on all new equipment how to open emergency windows from the outside or inside ideally should be the same on all cars. The composition of the glass should be the same. Numbers on the sides of cars should be clearly visible; this is the key for OREIS™ presentation. This standardization should be across North America. All of these improvements would help emergency responders. Exhibit VII below presents a typical passenger car law enforcement schematic contained within OREIS™.

Exhibit VII – Law Enforcement Schematic



Conclusion / Recommendations

As you can see, Mr. Chairman, what we do from a technological point of view is basically to integrate off the shelf capabilities into useful tools for responders. From various sources of information, we are able to encapsulate the key information into an easy-to-use incident response and preplanning tool. What needs to happen from our perspective is the following:

1. All railroads should participate in Operation Respond. This includes all carriers that haul hazardous materials and/or passengers. This should be voluntary, but with some incentives to help smaller roads with the necessary programming.

2. A national railroad infrastructure search engine along the lines of what I described in my testimony should be developed. The essence of the system is in place. The priority should be:

- DOD routes
- Hazardous Materials Routes
- Amtrak and Commuter Train Routes

As the project progresses over a series of years, the data could be made available to the responders segment by segment. A plan for updating also needs to be in place.

3. A national transportation incident alert and messaging system needs to be developed. Operation Respond's software users are the ideal group to serve as the network foundation. Users are password protected and authenticated, plus after receiving the alerts, they have the software to deal with the situation.
4. Finally, while the OREISTM software deployments are indeed growing, the goal needs to be universal coverage. In the case of the railroad industry, this means that all responders located along railroad lines are provided, through one form or another, access to OREISTM. At the present time, we are essentially half the way there.

Thank you Mr. Chairman. My associates and I would be happy to answer any questions.

Attachment A

OREIS™ Freight Railroad Carriers

- Alaska Railroad
- Brownsville and Rio Grande
- Burlington Northern Santa Fe
- Canadian National
- Canadian Pacific
- CSX Transportation
- Kansas City Southern
- Montana Rail Link
- Norfolk Southern
- PTR A
- TFM Railroad
- TGS
- Union Pacific
- Utah Railway

OREIS™ Passenger Railroad Carriers

- Alaska Railroad
- Amtrak
- Caltrain
- GO Transit
- Long Island Railroad
- MARC
- Metro North
- Northern Indiana Commuter Transportation
- New Jersey Transit
- North Carolina DOT
- Rocky Mountaineer
- Royal Celebrity Tours, Inc.
- UTA TRAX
- VIA Rail Canada
- Virginia Railway Express
- Washington Metro Area Transit Authority